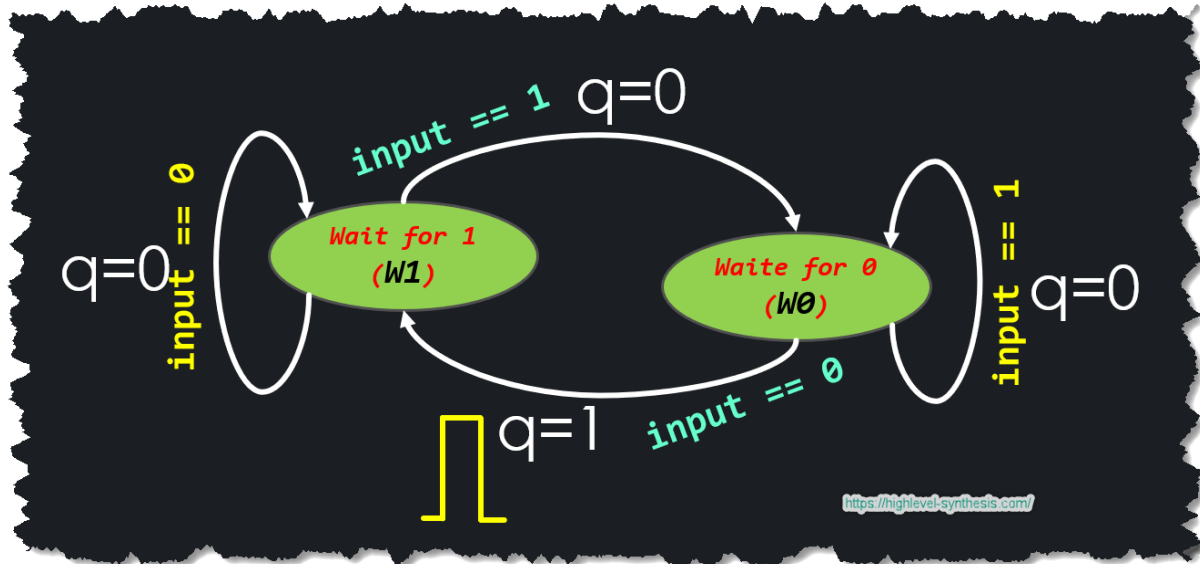


To answer the quiz question, the FSM should be modified as follows



Therefore the design code in HLS is as follows.

```
typedef enum{w1, w0} pulse_gen_states_type;

void pulse_generator(bool input, bool &pulse) {
#pragma HLS INTERFACE ap_none port=input
#pragma HLS INTERFACE ap_none port=pulse
#pragma HLS INTERFACE ap_ctrl_none port=return

    static pulse_gen_states_type state = w1;

    pulse_gen_states_type next_state;
    bool next_pulse;

    switch(state) {
    case w1:
        if (input == 1) {
            next_state = w0;
            next_pulse = 0;
        } else {
            next_state = w1;
            next_pulse = 0;
        }
        break;
    case w0:
        if (input == 1) {
            next_state = w0;
            next_pulse = 0;
        } else {
```

